

REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed July 2, 2007. Claims 1-25 are pending in the present application. Reconsideration and allowance of the application and pending claims are respectfully requested.

1. Response to Objections of the Specification

The specification has been objected to because claims 1, 12, and 19-22 recite "constituent part(s)," "absolute," or "absolutely," and the specification allegedly fails to provide antecedent basis for these terms.

In response, Applicant respectfully submits that the specification provides clear support for each of the terms. For example, page 7 of the specification describes the traversal of an XML document tree for each depth of the tree and the parsing of each node on each depth level, including text nodes, attribute nodes, and processing instructions, in addition to names and values. Accordingly, the specification describes how an XML document may be parsed into constituent parts. Further, page 11 of the specification provides examples of Node IDs that identify the absolute position of a node within a hierarchical document. For example, in Table 4, the node ID 0.2 identifies that the associated node is the root element at the second depth level while node ID 0.21 identifies that the associated node is a first child of the root element at the second depth level. Accordingly, the specification describes that a hierarchical position is absolutely identified by a unique identifier for a node as opposed to using an identifier that relates a position of another node. As such, the specification provides adequate antecedent basis for the claim terms. Therefore, Applicant respectfully requests withdrawal of the objections.

2. Response To Rejections of Claims Under 35 U.S.C. § 103

Claims 1-25 have been rejected under 35 U.S.C. § 103(a) as purportedly being unpatentable over *Tatarinov* ("Storing and Querying Ordered XML Using a Relational Database System") in view of *DeGroote* (U.S. Patent No. 7,076,763). Applicant respectfully traverses this rejection.

a. **Claim 1**

As provided in independent claim 1, Applicant claims:

A method of storing an XML document in a relational database comprising:

(a) parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element;

(b) associating a unique identifier with a respective parsed node of the document which identifies, absolutely, the hierarchical position of the node in the document; and

(c) storing each parsed constituent part of each node with its identifier in a table of a relational database.

(Emphasis added).

Applicant respectfully submits that independent claim 1 is allowable for at least the reason that *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least “parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element” and “storing each parsed constituent part of each node with its identifier in a table of a relational database,” as emphasized above.

While *Tatarinov* describes “Global Ordering,” *Tatarinov* does not concern itself with a complete parsing of an XML document. Thus, once an XML document is parsed and stored in a relational database in accordance with the teaching of *Tatarinov*, it is not possible to perform certain queries on the database. More particularly, *Tatarinov* does not parse the document for its attributes. As a result, the attributes are not stored separately and are not, therefore, retrievable by a query. Further, it is noted that attributes can frequently contain important semantic content within a document which is not capable of being retrieved by *Tatarinov*. For at least this reason, *Tatarinov* fails to disclose, teach, or suggest “parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element” and “storing each parsed constituent part of each node with its identifier in a table of a relational database,” as recited in claim 1.

The Office Action contends that *DeGroote* remedies the deficiencies of the *Tatarinov* reference. In response, Applicant respectfully submits that *DeGroote* is legally inadequate for these purposes. For example, *DeGroote* describes the generation of an XML document object which is an internal representation of an XML

object. In *DeGroote*, An XML parser parses an XML file to create the XML document object. "The XML parser is a basic aspect of the present invention that allows the XML to be parsed into its basic elements and converted into an internal representation of the live component," which may be web page components. Col. 11, lines 30-34. As such, the teachings of *DeGroote* involve building web page components and do not involve relational databases. Further, *DeGroote* does not disclose that attributes are stored with an identifier (which identifies the absolute hierarchical position of a node) in a table of a relational database.

As a result, *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least all of the claimed features of claim 1, such as "parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element" and "storing each parsed constituent part of each node with its identifier in a table of a relational database." Therefore, claim 1 is patentable over *Tatarinov* in view of *DeGroote*, and the rejection should be withdrawn for at least this reason alone.

b. Claims 2-11 and 23

Dependent claims 2-11 and 23 (which depend from independent claim 1) are allowable as a matter of law for at least the reason that dependent claims 2-11 and 23 contain all the features of allowable independent claim 1. For at least this reason, the rejections of claims 2-11 and 23 should be withdrawn.

c. Claim 12

As provided in independent claim 12, Applicant claims:

A relational database comprising
a table having a node field for storing each parsed constituent part of each node of an XML document including elements and, where an element has an attribute, the attribute of that element; and
an identifier field for storing an identifier associated with each respective node stored in the node field, wherein the identifier identifies, absolutely, the hierarchical position of the node in the document.

(Emphasis added).

Applicant respectfully submits that independent claim 12 is allowable for at least the reason that *Tatarinov* in view of *DeGroote* does not disclose, teach, or

suggest at least “a table having a node field for storing each parsed constituent part of each node of an XML document including elements and, where an element has an attribute, the attribute of that element,” as emphasized above.

While *Tatarinov* describes “Global Ordering,” *Tatarinov* does not concern itself with a complete parsing of an XML document. Thus, once an XML document is parsed and stored in a relational database in accordance with the teaching of *Tatarinov*, it is not possible to perform certain queries on the database. More particularly, *Tatarinov* does not parse the document for its attributes. As a result, the attributes are not stored separately and are not, therefore, retrievable by a query. Further, it is noted that attributes can frequently contain important semantic content within a document which is not capable of being retrieved by *Tatarinov*. For at least this reason, *Tatarinov* fails to disclose, teach, or suggest “a table having a node field for storing each parsed constituent part of each node of an XML document including elements and, where an element has an attribute, the attribute of that element,” as recited in claim 12.

The Office Action contends that *DeGroote* remedies the deficiencies of the *Tatarinov* reference. In response, Applicant respectfully submits that *DeGroote* is legally inadequate for these purposes. For example, *DeGroote* describes the generation of an XML document object which is an internal representation of an XML object. In *DeGroote*, an XML parser parses an XML file to create the XML document object. “The XML parser is a basic aspect of the present invention that allows the XML to be parsed into its basic elements and converted into an internal representation of the live component,” which may be web page components. Col. 11, lines 30-34. As such, the teachings of *DeGroote* involve building web page components and do not describe relational databases. Further, *DeGroote* does not disclose that attributes are stored with an identifier (which identifies the absolute hierarchical position of a node) in a table of a relational database.

As a result, *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least all of the claimed features of claim 12, such as “a table having a node field for storing each parsed constituent part of each node of an XML document including elements and, where an element has an attribute, the attribute of that element.” Therefore, claim 12 is patentable over *Tatarinov* in view of *DeGroote*, and the rejection should be withdrawn for at least this reason alone.

d. **Claims 13-18**

Dependent claims 13-18 (which depend from independent claim 12) are allowable as a matter of law for at least the reason that dependent claims 13-18 contain all the features of allowable independent claim 12. For at least this reason, the rejections of claims 13-18 should be withdrawn.

e. **Claim 19**

As provided in independent claim 19, Applicant claims:

A method of writing an XML document comprising:

(a) reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element;

(b) generating predetermined software events for respective read nodes; and

(c) passing the software events to a content handler which is arranged to translate each software event into a written node of the XML document, each written node being associated with a unique identifier which identifies, absolutely, the hierarchical position of a respective written node in the document.

(Emphasis added).

Applicant respectfully submits that independent claim 19 is allowable for at least the reason that *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least "reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element," as emphasized above.

While *Tatarinov* describes "Global Ordering," *Tatarinov* does not concern itself with a complete parsing of an XML document. Thus, once an XML document is parsed and stored in a relational database in accordance with the teaching of *Tatarinov*, it is not possible to perform certain queries on the database. More particularly, *Tatarinov* does not parse the document for its attributes. As a result, the attributes are not stored separately and are not, therefore, retrievable by a query. It is noted that attributes can frequently contain important semantic content within a document which is not capable of being retrieved by *Tatarinov*. For at least this reason, *Tatarinov* fails to disclose, teach, or suggest "reading data from a relational

database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element,” as recited in claim 19.

The Office Action contends that *DeGroote* remedies the deficiencies of the *Tatarinov* reference. In response, Applicant respectfully submits that *DeGroote* is legally inadequate for these purposes. For example, *DeGroote* describes the generation of an XML document object which is an internal representation of an XML object. In *DeGroote*, an XML parser parses an XML file to create the XML document object. “The XML parser is a basic aspect of the present invention that allows the XML to be parsed into its basic elements and converted into an internal representation of the live component,” which may be web page components. Col. 11, lines 30-34. As such, the teachings of *DeGroote* describe building web page components and do not describe relational databases. Further, *DeGroote* does not disclose that attributes are stored with an identifier (which identifies the absolute hierarchical position of a node) in a table of a relational database.

As a result, *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least all of the claimed features of claim 19, such as “reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element.” Therefore, claim 19 is patentable over *Tatarinov* in view of *DeGroote*, and the rejection should be withdrawn for at least this reason alone.

f. Claims 20 and 24

As provided in independent claim 20, Applicant claims:

A computer readable medium carrying a program which when executed on a computer causes storing of an XML document in a relational database by:

(a) parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element;

(b) associating a unique identifier with a respective parsed node of the document which identifies, absolutely, the hierarchical position of the node in the document; and

(c) storing each parsed constituent part of each node with its identifier in a table of a relational database.

(Emphasis added).

Applicant respectfully submits that independent claim 20 is allowable for at least the reason that *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least “(a) parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element” and “(c) storing each parsed constituent part of each node with its identifier in a table of a relational database,” as emphasized above.

While *Tatarinov* describes “Global Ordering,” *Tatarinov* does not concern itself with a complete parsing of an XML document. Thus, once an XML document is parsed and stored in a relational database in accordance with the teaching of *Tatarinov*, it is not possible to perform certain queries on the database. More particularly, *Tatarinov* does not parse the document for its attributes. As a result, the attributes are are not stored separately and are not, therefore, retrievable by a query. It is noted that attributes can frequently contain important semantic content within a document which is not capable of being retrieved by *Tatarinov*. For at least this reason, *Tatarinov* fails to disclose, teach, or suggest “parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element” and “storing each parsed constituent part of each node with its identifier in a table of a relational database,” as recited in claim 20.

The Office Action contends that *DeGroote* remedies the deficiencies of the *Tatarinov* reference. In response, Applicant respectfully submits that *DeGroote* is legally inadequate for these purposes. For example, *DeGroote* describes the

generation of an XML document object which is an internal representation of an XML object. In *DeGroote*, an XML parser parses an XML file to create the XML document object. "The XML parser is a basic aspect of the present invention that allows the XML to be parsed into its basic elements and converted into an internal representation of the live component," which may be web page components. Col. 11, lines 30-34. As such, the teachings of *DeGroote* describe building web page components and does not describe relational databases. Further, *DeGroote* does not disclose that attributes are stored with an identifier (which identifies the absolute hierarchical position of a node) in a table of a relational database.

As a result, *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least all of the claimed features of claim 20, such as "(a) parsing each node of the XML document into constituent parts, including parsing elements and, where an element has an attribute, the attribute of that element" and "(c) storing each parsed constituent part of each node with its identifier in a table of a relational database." Therefore, claim 20 and claim 24 which depends there from are patentable over *Tatarinov* in view of *DeGroote*, and the rejection should be withdrawn for at least this reason alone.

g. Claims 21 and 25

As provided in independent claim 21, Applicant claims:

A computer readable medium carrying a program which when executed on a computer causes storing of an XML document in a relational database by:

(a) receiving software events representing respective parsed nodes of the XML document;

(b) associating a unique identifier with the respective parsed nodes of the document which identifies, absolutely, the hierarchical position of the node in the document; and

(c) storing constituent parts of each node of the document with its identifier in a table of a relational database, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element.

(Emphasis added).

Applicant respectfully submits that independent claim 21 is allowable for at least the reason that *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least "storing constituent parts of each node of the document with its identifier in a table of a relational database, the constituent parts comprising any

elements of the node and, where an element has an attribute, the attribute of that element,” as emphasized above.

While *Tatarinov* describes “Global Ordering,” *Tatarinov* does not concern itself with a complete parsing of an XML document. Thus, once an XML document is parsed and stored in a relational database in accordance with the teaching of *Tatarinov*, it is not possible to perform certain queries on the database. More particularly, *Tatarinov* does not parse the document for its attributes. As a result, the attributes are not stored separately and are not, therefore, retrievable by a query. It is noted that attributes can frequently contain important semantic content within a document which is not capable of being retrieved by *Tatarinov*. For at least this reason, *Tatarinov* fails to disclose, teach, or suggest “storing constituent parts of each node of the document with its identifier in a table of a relational database, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element,” as recited in claim 21.

The Office Action contends that *DeGroote* remedies the deficiencies of the *Tatarinov* reference. In response, Applicant respectfully submits that *DeGroote* is legally inadequate for these purposes. For example, *DeGroote* describes the generation of an XML document object which is an internal representation of an XML object. In *DeGroote*, an XML parser parses an XML file to create the XML document object. “The XML parser is a basic aspect of the present invention that allows the XML to be parsed into its basic elements and converted into an internal representation of the live component,” which may be web page components. Col. 11, lines 30-34. As such, *DeGroote* describes building web page components and does not describe relational databases. Further, *DeGroote* does not disclose that attributes are stored with an identifier (which identifies the absolute hierarchical position of a node) in a table of a relational database.

As a result, *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least all of the claimed features of claim 21, such as “storing constituent parts of each node of the document with its identifier in a table of a relational database, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element.” Therefore, claim 21 and claim 25 which depends there from are patentable over *Tatarinov* in view of *DeGroote*, and the rejection should be withdrawn for at least this reason alone.

h. **Claim 22**

As provided in independent claim 22, Applicant claims:

A computer readable medium carrying a program which when executed on a computer causing writing of an XML document by:

(a) reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element;

(b) generating predetermined software events for respective read nodes; and

(c) passing the software events to a content handler which is arranged to translate each software event into a written node of the XML document, each written node being associated with a unique identifier which identifies, absolutely, the hierarchical position of a respective written node in the document.

(Emphasis added).

Applicant respectfully submits that independent claim 22 is allowable for at least the reason that *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least “reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element,” as emphasized above.

While *Tatarinov* describes “Global Ordering,” *Tatarinov* does not concern itself with a complete parsing of an XML document. Thus, once an XML document is parsed and stored in a relational database in accordance with the teaching of *Tatarinov*, it is not possible to perform certain queries on the database. More particularly, *Tatarinov* does not parse the document for its attributes. As a result, the attributes are not stored separately and are not, therefore, retrievable by a query. It is noted that attributes can frequently contain important semantic content within a document which is not capable of being retrieved by *Tatarinov*. For at least this reason, *Tatarinov* fails to disclose, teach, or suggest “reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element,” as recited in claim 22.

The Office Action contends that *DeGroote* remedies the deficiencies of the *Tatarinov* reference. In response, Applicant respectfully submits that *DeGroote* is

legally inadequate for these purposes. For example, *DeGroote* describes the generation of an XML document object which is an internal representation of an XML object. In *DeGroote*, an XML parser parses an XML file to create the XML document object. "The XML parser is a basic aspect of the present invention that allows the XML to be parsed into its basic elements and converted into an internal representation of the live component," which may be web page components. Col. 11, lines 30-34. As such, the teachings of *DeGroote* do not involve relational databases. Further, *DeGroote* does not disclose that attributes are stored with an identifier (which identifies the absolute hierarchical position of a node) in a relational database.

As a result, *Tatarinov* in view of *DeGroote* does not disclose, teach, or suggest at least all of the claimed features of claim 22, such as "reading data from a relational database which is representative of constituent parts of each node of the XML document, the constituent parts comprising any elements of the node and, where an element has an attribute, the attribute of that element." Therefore, claim 22 is patentable over *Tatarinov* in view of *DeGroote*, and the rejection should be withdrawn for at least this reason alone.

CONCLUSION

For at least the reasons set forth above, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that the pending claims are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned agent at (770) 933-9500.

Respectfully submitted,



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